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VOLUME 18, NUMBER 6 ● **JUNE 1948**

In This Issue

EDUCATIONAL CONFERENCE 2

DRAFT STAND WINS PRAISE 4

MARK CLARK LAUDS PROFESSION 4

EDUCATOR CITES REVAMPING NEED 5

PROFESSOR URGES NSPE MEMBERSHIP 6

VAN PRAAG COUNSELS GRADS, FROSH 7

LEGISLATIVE COMMITTEE REPORT 9

OLDEST NSPE MEMBER CLAIMED 10

PHILADELPHIA MEETING PICTURES 11

N. Y. ANNUAL CONVENTION 12

NATIONAL, STATE SOCIETY, CHAPTER NEWS 14

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Conference Centers Attention On Education Improvements

Engineering educators contributed heavily to the success of the inter-professions conference on education for professional responsibility, held at Buck Hill Falls, Pa.

The conference brought together 96 educators from the five main professional fields—law, medicine, divinity, business and engineering—to provide an opportunity for the different professions to assist each other in establishing educational programs which would graduate "not only competent practitioners but good citizens and better men and women as well."

By listening to the experiences of others, each of the professions represented was trying to learn more about:

1. What the goals and aims of professional schools should be in this jet-paced world;

2. What type of courses must be included and how these courses can be taught in order to give professional men and women the best possible start in learning their professions from experience and the qualities which citizenship in an enduring free society demands of its leaders.

In reading papers, moderating sessions and in speaking from the floor, the representatives of the engineering profession clearly illustrated that field was in the forefront in the drive for such programs.

Leading the engineering representation at the conference, held under sponsorship of Carnegie Corporation of New York, were Karl T. Compton, president of Massachusetts Institute of Technology; Robert E. Doherty, president of Carnegie Institute of Technology; and President Harry S. Rogers of Brooklyn Polytechnic. Twenty-two other outstanding men in the field also were present.

Rogers Cites Faults

Discussing the gaps between the statement and achievement of objectives in the education of the engineer, Rogers outlined the nature of engineering thought. The greatest gap in the achievement of educational objectives stated by the committees of the Society for Promotion of Engineering Education, he said, lies in the lack, in both educational and professional groups, of a thorough, critical understanding of the basic and generic philosophy of engineering thought and the failure therefore to integrate the training given in the particular courses in a curriculum, and to lay the foundation of a general philosophy of method which can give a stronger unity to the engineering profession.

Turning from technical to general education, he expressed belief that education for responsible citizenship could not come from general education as we know it today, and that "engineers are skeptical of the methods and achievements of general education."

"We have listened too long to such trite expressions as 'the liberal arts prepare one for living, whereas specialized training prepares one for making a living'," he said. "It seems apparent that those who make such statements are confusing the cumulative contributions of liberal culture to mankind with achievements which can be reasonably expected from two years and eight months of general education.

"To achieve results in the education of students for responsible citizenship . . . will require a more specific determination of the social and philosophical consideration of general education by competent philosophers as well as a more comprehensive and valid development of the theory of mental organization and the structure of the personality on the part of psychologists.

Expect Opposition

"It is conceivable that there may be strong opposition to departure from a position of neutral scientific detachment within the areas of general education, but should we fail to undertake the correlation of knowledge with the conditioning of attitudes and behavior, we had better stop orating about preparation for responsible citizenship."

Professor Benjamin R. Teare, of Carnegie Tech, pointing out existence of a "problem solving madness," declared that solving problems is one of the main tasks of the engineer and, when employed in the right way, is one of the most important activities in engineering education. He told how the problem solving method is being put to use at Carnegie Tech, pointed out the dangers in using that type of instruction and made suggestions for instruction by problem solving.

"Teaching through the use of problems is not of necessity good education, and, in fact, may be a waste of time or worse," he said. "To be really effective the problems must be directed towards appropriate professional ends, they must be assigned at the right times and in the right backgrounds, and, above all, they must be properly handled by the student."

The Carnegie professor pointed out that "professional education . . . must do more than acquaint the student with facts, principles, and existing procedures; it must, in so far as possible, teach him to use fundamental principles in dealing with situations that are new to him and also teach him how to continue to learn throughout his life from his professional activity."

After presenting a problem-solving method which included five steps—defining the problem, planning a treatment, executing the plan, checking the work as a whole before using the solution, and learning from the experience—Professor Teare said that these stages cannot be considered a rigid sequence to be followed in handling any problem, but "without this well-ordered method, exercise in problem solving is little more than exercise in random thinking."

He warned against the use of subprofessional problems, but added, "at times to use professional problems at all is out of place."

"For example," he explained, "in first introducing the student to a new principle such a problem is usually too complex, and probably involves

too much detail . . . What is required is a problem stripped of its complexity and idealized so that the multiple issues are reduced, often to a single one. This is what is meant by an illustrative instance."

Over-Simplification Danger

Professor Teare also warned against using instances when the student is equipped to deal with the more complex and professionally realistic problems, and against cheating on the part of the teacher when he discusses his use of the professional problem as well as when he is actually using them.

Pointing out that the problem solving method of instruction is fundamental and adaptable for training for any of the professions, Professor Teare concluded his remarks by suggesting that those who use the method:

1. Recognize the characteristics of the professional treatment of a problem and use this as the criterion for a professional problem;

2. Use professional problems as widely as possible in instruction, with care being taken to insure suitable level and background;

3. Use illustrative instances where professional problems are not suitable, as in the introduction of principles and in the student's early work with them, but not otherwise;

4. Use sub-professional exercises sparingly if at all.

5. Above all, insist that the student, while thinking out the problems for himself, conform to the fundamental stages and functions which are inherent in all well-ordered problem solving.

Education in Spotlight

American Engineer this month focuses its attention on engineering education.

At the same time, it salutes the American Society for Engineering Education, which is holding its 56th annual meeting at the University of Texas in Austin June 14 through 18. The Society and its predecessor (Society for Promotion of Engineering Education) have been a powerful force in bringing about the changes in educational programs which furtherance of the profession indicated were imperative.

As one educator has put it, the "velocity of change is as yet low, but the acceleration is high." Revamping of engineering education—call it the "new look" if you will—is at the moment getting serious consideration of every engineering faculty. Selling the idea that everything about engineering education might not be perfect has been a major task of ASEE, and it is a task that has now created still further work for the Society. If it can continue to show the ability to meet and solve problems in the years ahead that it has shown in the past, the Society will continue to hold the respect of every engineer.

Fathered Conference

Credited with conceiving the idea of the Buck Hill Falls conference was Provost Elliott D. Smith of Carnegie Institute of Technology.

Provost Elliot D. Smith, of Carnegie Institute, the last speaker on the conference program, presented what many termed "one of the most concrete plans for the type of professional education needed today."

"Education in the past has unquestionably failed to prepare professional men to assume a place of professional democratic leadership in dealing with the problems of society," he said, then outlining a program which includes:

1. A new method of teaching humanistic and social courses and a new content for them.

2. A shortening of the time required for a professional degree by teaching the human and social courses at the same time as the professional courses.

3. A joining of general and technical education in common method of instruction and in an interrelation of content.

Speaks From Experience

Speaking from experience as the provost of a school which for the past decade has been developing a program which embodies all three of the above points, Smith stated that the general education included in the professional programs of American schools has failed to provide a basis for good citizenship because:

1. It has been taught in the traditional, academic manner and has done nothing more than create "even in the better students only the ability to discuss problems rather than the ability and the sense of responsibility to deal professionally with them."

2. The general and technical programs have been taught in parallel (and have never met) or they have been taught in layers, as in the case of medicine or law in which a student must complete four years of general education before going on to graduate work.

3. In cases where the student goes on to graduate school after completing his "general" education, the intensity of the training and of the later internship and the hard struggle to get established in the profession washes away any social interest which has been aroused in his undergraduate studies.

4. The teaching of the general and technical courses apart has left the intellectual power and discipline of mind which professional education and experience develop too strictly narrow and technical in character to be applied to social and human problems.

"All this," Provost Smith declared, "emphasizes the conclusion that the position of professional study, work and development today is so predominant over all other aspects of life that if professional men are to participate adequately in meeting the problems of society, they must apply their professional attitude and skill to dealing with these problems, and it is the responsibility of education to devise means of equipping them to do so."

In order to provide this type of program, said the provost, "humanistic and social education must make its goal the development in the student of power to utilize knowledge both in learning from experience and in dealing effectively with problems."

In outlining his program, he asked

(Continued on Page 19)

NSPE Engineering Student Draft Stand Wins Praise and Support

Additional support for opposing drafting of engineering students in case Selective Service legislation is approved has come from a variety of sources. NSPE's position was outlined to the House Armed Services committee by Paul H. Robbins, executive director (see May American Engineer).

Vannevar Bush, chairman of the research and development board of National Military Establishment comments:

"I am glad to know that the National Society of Professional Engineers is lending its support to the effort to safeguard our supply of trained engineers and scientists at its source. Unfortunately, we are now feeling the effects of our shortsighted draft policy during the second war, and it is hoped that we may effectively prevent the recurrence of such a situation . . . The board appreciates your offer to be of assistance in the matter and you may be assured we shall call upon your whenever the need arises."

Charles Allen Thomas, executive vice president of Monsanto Chemical, St. Louis, writes:

"Thank you very much for sending me a copy of your testimony . . . Congratulations on your fine statement, which . . . is in substantial agreement with the testimony of the American Chemical Society."

N. W. Dougherty, dean of Engineering, University of Tennessee, suggests:

"This is a very good statement of the problem. Were I to add anything I would make the statement even stronger in an effort to avoid depopulating science and engineering by Selective Service. I think this is the most shortsighted thing the Army did during the last war."

And on May 3, Defense Secretary James Forrestal told the same committee before which Robbins appeared in behalf of NSPE:

"If I were writing this bill, I would have included a provision authorizing the deferment of persons engaged in scientific and technical study, in research and so on."

Secretary Forrestal endorsed a letter from Dr. Bush to the committee asking that Congress clearly express its intention in the preamble of any Selective Service act that may be approved that the maintenance of a maximum research program be not impaired and that replenishing and increasing the Nation's scientific and technical manpower pool be allowed to proceed.

"We must not again block the flow of men into scientific training," his letter says pointedly, "without being very sure that wisdom is generously being brought to bear on every phase of balancing our efforts for maximum results."

Texas Society, through its President Trigg Twichell, stated its views in letters to the two Texas senators, 21 representatives and Chan Gurney, chairman of the Senate Armed Services Committee.

Asking support for a provision of the draft law which would require deferment of qualified students of engineering and science, the TSPE letter declared that in modern warfare engineers and scientists must play a major part in any adequate defense of our country and students should be allowed to continue their education so that they may be able to render their maximum service.

NSPE Praises Editorial Stand of Business Week

NSPE has officially praised Business Week Magazine for its editorial demand for participation of engineers in administration of the European Recovery Program (ERP).

The praise is contained in a letter from Paul H. Robbins, executive director, which is printed in the May 1 issue of Business Week (Page 40).

"The engineering profession, I am sure, noted with considerable interest your editorial concerning the engineering involved in the European Recovery Program," the letter reads in part.

"It is indeed heartening to see one of our leading business publications take note of this fact and urge that adequate consideration be given to appropriate utilization of technological skills in accomplishing this tremendous job."

Gen. Mark Clark Lauds Engineering Profession

High praise for the enginering profession and for engineering registration has come from one of the top Army generals of World War II in a letter to NSPE headquarters.

Mark W. Clark, commanding general of the Sixth Army now and wartime leader of the Fifth Army during its push up Italy, gives the praise in a letter to Paul H. Robbins, executive director of NSPE. NSPE had written to Clark outlining the grandfather clause provisions of the California registration law and pointing out that engineers attached to the Sixth Army were eligible for registration under the law. In his reply, written from the Presidio of San Francisco, Gen. Clark declared his intentions of circularizing the registration law information throughout the Army installations in California.

He expressed belief that officers presently serving with the Sixth Army and who are engineers by profession will be interested in taking advantage of the provisions of the law.

"The engineering profession has played, and will continue to play," his letter concludes, "an important role in our National Defense Program; and the registration of professional engineers will enhance the prestige and importance of this fine profession."

Survey Proves Waste Of Engineering Service

Results of a special survey conducted by two of the founder societies shows clearly why NSPE is demanding more effective utilization of engineers in the armed services.

The survey was conducted by mail of members of ASCE and ASME, with more than 13,300 replies giving an accurate basis for judging utilization.

The survey shows only one-third of the engineers polled—33.9% to be exact—were utilized in their primary field at their level of competence throughout most of their military experience; 16.2% were so utilized for at least half of the time they were in service; 23.4% were not utilized in their primary fields but did utilize throughout the time they were in service collateral fields in which they had received training or gained experience; and 26.5% utilized in primary or collateral fields either only for a short period or not at all.

Carnegie Tech Head Illustrates Need for Educational Changes

America's educational system has produced men with "admirable intellectual power in establishing the physical and biological sciences" but has failed to make man capable of coping with "human, social and economic problems . . . in a civilized manner."

That's the accusation made by Dr. Robert E. Doherty, president of Carnegie Institute of Technology, in a call for a general revamping of education so that the system will do more to "establish the essential basis for civilized action on the human and social side of life."

Education, as the educator sees it, should "cultivate in the citizenry a philosophy of national and individual life that is essential to an enduring free society." He urges that special attention be given in this respect to professional education, declaring that a nation's "professional men set the pattern of national life."

Dr. Doherty cites the engineering education program initiated by Carnegie Tech in 1938 as one example of an approach to the problem of professional education to make it capable of meeting the demands of present-day society. The program, he says, is aimed at (1) developing in the student a thorough understanding of and the ability to use the professional method of thought (a. defining a problem, b. planning a solution, c. carrying out the plan, 4. checking the results, and 5. learning from experience), and the ability and desire to learn from professional experience; and (2) developing in the student the ability and desire to deal with the whole problem, to consider the human-social as well as the technical elements of all problems.

Such a program, Dr. Doherty declares, cannot be accomplished through traditional educational procedures. In fact, he declares, the teaching problem requires classroom procedures that are fundamentally different. Unless that is recognized, both problem and plan will be misunderstood, he adds.

How Program Works

At Carnegie Tech, 78 per cent of the engineering student's time is spent on scientific and engineering studies while the remaining 22 per cent is taken up by the social relations program. Both elements, though separate, are closely coordinated both horizontally and vertically. Horizontal coordination assures that all studies in any semester will be related as to teaching method, subject matter and terminology, and timed so that the student will have acquired from one course useful knowledge and abilities when these are needed in another. Such coordination is especially important in the first two years of basic study.

Vertical coordination assures that what is learned in one semester is used in later work and what is taught at one point is taught with the later work in mind.

Continuous advancement and orderly progression to higher and higher intellectual levels is accomplished, according to Dr. Doherty, through what the Carnegie faculty calls the Principle of Use. This principle dictates that only those subject matters will be included in any semester that will be used at the time or later in a course and that cannot be taught better later.

The Principle of Use has a triple coordinating effect in that it:

1. Provides an intelligent and effective basis for selecting and limiting subject matter.

2. Helps learning by repeated study of the basic concepts and principles in increasingly complex situations.

3. Increases student interest because the student knows what he is studying will be used in subsequent work.

Cites Current Faults

"American education is plagued with an affliction which I would call subject-matteritis," the president says in commenting on the problem of limiting and selecting subject matter in such a program. "The most pervasive and insidious educational fallacy I know of is that education is achieved by merely learning subject matter; and what is equally bad is the corollary that the way to improve education is to shift subject matters in the curriculum—to add this subject matter and omit that, to increase the semester hours in this, decrease them in that.

"The way to improve education is to disregard traditional course content when it does not contribute to the purpose and to include those subject matters which contribute directly to the achievement of the desired goal. Miscellaneous subject matters studied as ends in themselves have no place in crowded programs of professional education. This kind of education is not to be achieved by merely learning subject matter; on the contrary, it is inhibited by cluttering the minds with unattached information. If not directly related to a well-ordered structure of fundamental knowledge, facts and information become excess baggage and should be jettisoned from the curriculum."

Carnegie considers as appropriate subject matters (1) basic concepts and

They're His Views

Dr. Robert E. Doherty

generalizations; (2) those cases or concrete situations which contribute to better understanding of these basic concepts and generalizations; (3) the symbols, metaphors, techniques, etc. essential to equipping the student to utilize these basic concepts and generalizations in professional thinking. The Carnegie plan thus emphasizes the teaching of fundamental techniques—those which the student must use in his work in solving problems through the professional method of thought.

"Routine techniques learned as ends in themselves, such as expert draftsmanship or special design methods," Dr. Doherty adds, "are not fundamental in the sense here considered; and, like unattached subject matters, do not qualify for a place in the ideal program."

Ideal Not Obtainable Now

Admitting that insofar as techniques are concerned, this ideal program cannot be fully adopted for the time being because too many post-college jobs require the graduate to have learned routine techniques that should and could be learned better on the job, the college chieftan thinks that persistent effort "should persuade industry to regard the first year or so as a true internship, in which the graduate learns to be a practitioner, and thus to leave the precious time in college for fundamental study."

Demand's imposed upon the teacher by such educational objectives as embodied in the Carnegie plan are austere. The teacher becomes a coach, a thinking coach, who guides and disciplines the student's thinking while the student does the thinking; and he encourages and inspires human appreciation, being careful that the student does the appreciating. Recitation classes to determine whether the student has studied his lesson, or in which the instructor does all the talking, have no place.

Dr. Doherty says that although the plan has been in effect for a decade and still must be considered as "in an experimental stage," it is nevertheless far enough along so that "we feel reasonably confident that we are approaching the right design of the main structural elements." He offers the Carnegie plan as evidence that attempts are being made in engineering to bring professional education "in tune with the new era and to provide a professional program which will graduate men who will be just as good citizens as they will be engineers."

Professor Outlines Educator's Place in NSPE Membership Roll

Case for college of engineering professors and instructors holding membership in NSPE, its member state societies and local chapters has been eloquently voiced by Herbert L. Jones, professor of electrical engineering at Oklahoma A. & M. College, Stillwater.

Speaking before a gathering of his fellow engineering teachers at the Oklahoma school, Jones, a member of the Oklahoma Society, makes this case:

"As the technology of our civilization becomes increasingly more complicated, the profession of engineering must necessarily depend more and more upon the engineering divisions of our colleges and universities for men trained in the fundamentals of mathematics, physics and chemistry and the application of these subjects to the realm of practical endeavor.

Higher Conduct Expected

"Engineering instructors are largely responsible for the training of the engineers of the future. It is our common duty and responsibility to prepare these students entrusted to us so that they will be able to enter their chosen profession as professional men. It is axiomatic that as a profession or a field of science develops an increasing amount of knowledge, an ever higher standard of conduct is expected from the individual entering that field of endeavor.

"The hope that the comparative freedom of the American people may endure does not lie alone in public orations, congressional debates and popular suffrage," Dr. Doherty explains. "These are merely the manifestations of that freedom. It lies in the ultimate attainment in public affairs of scholarly and professional thought, pursued under the discipline of the scientific spirit and motivated by a philosophy of public good.

"Further, it lies in the cultivation of abilities and attitudes during professional study that will make possible attainment of these essential qualifications, and therefore lies finally in the proposal that professional education recognize its great opportunity and responsibility and provide programs that will accomplish the purpose."

"The engineering profession is now firmly established. One of the pressing needs at the present time is to sell our graduate and practicing engineers on a membership in our state and national professional engineering society. The doctors and surgeons have attained this goal with their American Medical Association. Here we have, possibly, at least one reason why our doctor friends drive Buicks and Packards while we engineers make our way about in Fords and Chevrolets.

Jones

"We engineers must get organized. Without one hundred per cent membership in our professional organization, we cannot advance to the goal of professionalism as rapidly as we should, and our incomes will remain extremely mediocre until we do so.

"If, as instructors, we are going to lead our students towards an appreciation of their profession, we must be professional ourselves. We cannot be one of the gang if we are going to stay outside the fence. The time is coming when every engineering instructor will have to be a registered professional engineer before he can hold a position in an accredited engineering institution.

Cites Benefits

". . . it will pay you well, both in personal satisfaction and in material advantages, to attend the meetings of your professional society and take a part in those meetings. You will find that your professional outlook will be broadened and the enjoyment you derive from your work will be increased. You will have friends, professional friends, from all

(Continued on Page 19)

Society Leader Describes Path Ahead For Graduates and Students

By Alex Van Praag, Jr.
President
National Society of Professional Engineers

Within a few weeks, hundreds of you neophyte engineers, garbed in the traditional cap and gown, will have received your diplomas signifying the end of your undergraduate careers.

Even as you receive that cherished sheepskin, hundreds more are preparing to move into the classrooms you are leaving to start their way up the ladder toward their diplomas.

Whether you are completing your course of instruction in the field of your choice — Engineering — or preparing to start your college careers in that field, your situations in many respects are identical.

You are looking forward to the time when you will be graduated and presented with a coveted and well-earned engineering degree. You will then enter a new era in your life and you will venture into the world's multiplicity of activities, whatever may be your chosen specialized endeavor. You are anxious to enter upon your chosen professional work and to begin a career that will lead you to ultimate eminence in your profession. You want to be sure that you are attaining a position of opportunity and security and one which will lead to your ultimate obtaining of a professional status that will lastingly insure you social security in its many phases.

You want to be recognized as a leader in your profession. You have visions of retirement after having had a career of professional activity rewarded by remuneration and social professional position that will give you the security and peace of mind which one is entitled to in his years of retirement.

You see ahead of you a long and difficult course. You carry in your mind certain fears and vague apprehensions. Sometimes you are bewildered. You look back at this troubled world and you wonder wherein this world will lead you in your endeavor. Perhaps you ask yourself whether there are yet to be attained those ideals for which you have studied and prepared yourself. You ask yourself whether engineering accomplishment has perhaps not already advanced so far that there remains for you little opportunity in the future. You ask yourself if your generation is not to be hampered by social and labor restrictions, national and international strife, that kill your very initiative to attain your ideals and goals. You ask yourself if our form of government may not even be insecure so that your future is most uncertain.

Look Ahead Maturely

Let us look with a little realism into the situation which does face you. Let us deliberate maturely. Let us refrain from forming conclusions prematurely. This is still the finest country in the world. Opportunity is unlimited. Success awaits those who are prepared and who are willing to work to succeed and who will accept the opportunities which are offered. Let us reflect. The past offers a key to the probable future.

Well do I recall my college career and my graduation with my degree in engineering. Times then were troubled too. European nations had been at war for some three years. Our own nation was on the verge of entering the war, and did so prior to my actual graduation.

Employment was at a relatively low ebb. Salaries were low. Graduates were offered salaries as little as $50 and $75 per month. Foreign service in industrial organizations offered salaries as low as $150 per month.

To those of us then about to graduate came a certain psychological fear. We, too, feared that the war would cost us all of our gains attained in a long and costly education. We, too, thought that our various engineering careers might be impeded by the already far advanced status of our nation's technological development.

Numerous industries were seemingly halted in their progress. For example, our transportation systems seemed to be "good enough" and on a very even keel with little prospect for radical change. Air travel had just

Author-President

If you know a young engineer who is graduating or who will start his college training next Fall, the friendly counsel in this article by NSPE President Van Praag should get into his hands.

begun to show signs of real life but had, nevertheless, been born and advanced beyond its very initial development. The electrical industry for one was seemingly well stabilized and quite advanced technologically. Communications were an accepted fact. The mining industry methods were seemingly very well established and not destined to change radically. The construction industry was lackadaisical.

Industry and commerce, in general, were moving along relatively slowly and there were seemingly few offerings from research or likely radical developments to stir our imaginations, and none to offer glamour to the period or the times. So it seemed also in other phases of civic life and commerce.

We Were Wrong

Where were we headed? Was our education in vain? Had we a chance to succeed? These seemed logical questions. How far wrong we were in entertaining those fears! Let us look at our situation today as proof of this statement.

Since my graduation from college, the world has experienced many cycles and changes. First, we entered and fought World War I successfully. We suffered all of its terrifying offerings in loss and physical and mental anguish. We emerged successful. We went from a period of low prosperity to one of peak prosperity. We dropped into a depression of the greatest duration and magnitude ever previously experienced.

We fought our way out of this depression by sheer utilization of brains and manpower, and entered into a period of relatively stable prosperity. We approached and entered into another war. We have passed through long years of this second war with its attendant suffering and again we are on a plateau or level of high prosperity. So high is our level, in fact, that we now fear a further prolonged recession or depression.

The transportation systems of our world, which we earlier thought had reached a peak of excellence, were proven to be most retarded and in need of complete rehabilitation. Look at the speeds at which we travel, not only via rail but via air. The high speed steam engine—the Diesel engine, and other rail improvements have literally thrown away our former transportation system. Look at the advancement in aviation from the crude aircraft of World War I to the present day advanced aircraft of World War II, and in the post-war period following.

Look again at the electrical and mechanical industry which we earlier thought had reached a high stage of perfection. Equipment of a size and kind with efficiencies unthought of in the early 20's are today stark realities. Radio, then just born, is now mature—full grown. Look at the communications industry—at electronics, at radar. Look at our industrial developments in mechanized equipment, in plastics, textiles, synthetics, and thousands of others.

Construction methods of the early 20's are largely obsolete. Sanitary disposal works and water purification facilities have out-moded all expectations of the last 30 years. Look at the medical advancement in surgery and all of the other phases of medicine as an instance of professional advancement. Look at our atomic bomb, the new-born child, which has been the result of tremendous research and application of ingenuity and engineering skill. It has set us into a completely different age. I could mention many other advancements, all of them within the course of a few short years, and all of them intimate to engineering advancement.

Who Says Job Is Done?

True, our world today is again in a period of flux and we are concerned about both national and international relations and the threat of a third World War. But in spite of all of this, who of you wants to stand and say that this last generation, of which I am a part, has not completely revolutionized the world and our thinking of 30 years ago? Who of you wants to stand and say that the past generation has fulfilled all real accomplishments and has had an advantage which you do not have?

Are these mentioned items not enough indications for you to look forward to what future endeavor can produce in accomplishment and to excite your imagination? Look, if you will, to any one of our sciences, to our government, to industry and commerce, to our profession. Show me one, if you can, that has not progressed far in making this a better world in which to live, and so far progressed that we can be ashamed for having so much as entertained fear when we graduated from our colleges that we had no future.

Who of you does not want to enter the future with a determination to see continued accomplishment comparable, and even greater, than that accomplished in this last generation?

What tomorrow holds is, to be sure, a matter of speculation. I am not referring to speculation or individual gambling in the ordinary sense. I am thinking of forecasting or prophesying the future. Such speculation based on past history and experience is warranted.

Is it unbelievable that we will have aircraft carrying hundreds of people and carrying tons of freight at speeds not now known, with such safety devices as will make impossible the now frequently heard of accidents and casualities? Is it unbelievable that motor and rail transportation will be completely replaced by some other form of powered vehicle with related high speed and safe transportation? Is it unbelievable that our present types of communications will be completely replaced by companions of the radio and television with individual communications, person-to-person, at remote stations?

Is is unbelievable that our lighting systems will be completely discarded in favor of new sources of light from the sun or from atomic energy, and the elimination of miles and miles and miles of unsightly and inconvenient pole lines? Is it unbelievable that our heating systems will be completely discarded in favor of the utilization of heat from atomic developments? Is it unbelievable that we will control the weather and other elements to the extent of eliminating devastating floods and prolonged droughts and thereby make this world a still better world in which to live?

Is it unbelievable that our utility systems will be completely obsolete with new means at our command? May we not well have radically new types of construction from materials not now known, and of completely fire-resistant materials to eliminate the terrific toll in loss of life and property? These are only a few of the dreams of the present that can become the realities of the future. The mind can wander at random seeing new possibilities in the light of our past history and experience.

The tomorrow is for you. The past has been for me. What you do in the future is dependent upon you and your

(Continued on Page 21)

Student Engineer Exemption Stressed in Solons' Reports on Draft Bills

By Frederick W. L. Hill,
Chairman, Legislative Committee

At this stage of the legislative process it seems appropriate to review the position of Congress with respect to engineering deferments under the proposed reinstitution of Selective Service. The position of the engineering and scientific spokesmen at the hearings was clear and unanimous in principle.

The Congressional reaction to the NSPE testimony was typical of that accorded to all of the witnesses on this point—a sympathetic understanding of the problem stated and a desire to avoid past mistakes in the drafting of technological skills and potential contributors to these vital fields.

With this general background it was to be expected that those in charge of the legislation would act accordingly in the language of the legislation itself. Now, with the Senate and House bills and committee reports at hand, it is apparent that Congress is not willing to go as far as the engineering and science witnesses would have liked. At first blush this would appear to be a disappointing development, but a close study of the committee reports appears to justify a feeling that a substantial point has been won even though the probable final law to be enacted will not so indicate.

Both the House and Senate bills leave the deferment of engineers and scientists and the students in those fields to the discretion of the president, who may in turn delegate that authority to subordinates. The Senate bill, however, does go one step further in its preliminary policy statement, stating that "the Congress further declares that adequate provisions for national security requires maximum effort in the fields of scientific research and development, and the fullest possible utilization of the Nation's technological, scientific, and other critical manpower resources." It should be pointed out, however, that this policy statement is not a mandatory provision of operative law.

Committee Reports State Policy

The more substantial gain is found in the respective reports of the House and Senate Armed Services committees. Therein is contained an elaboration of this policy and an expression of the committees' sympathy with the thoughts of the engineering and scientific witnesses. The House committee report notes the "strong presentations" made on this point and quotes at length from the views of Dr. Vannevar Bush, chairman of the Research and Development Board, who suggested the National Security Resources Board as the proper agency to pass on technological deferments.

The committee recognized that the witnesses were unanimous on the point that the power to defer scientists and other technological specialists should not lie with the Selective Service System. Despite its sympathy with the proposals, the committee concluded that it would be unwise to establish specific criteria in the legislation because it would open the door to similar claims for other groups. The Senate committee report gives substantially the same reason for not putting its convictions in the legislation.

A realistic interpretation of this formal language appears to justify a conclusion that what Congress is really saying is that it cannot or should not place itself in a position which would encourage activity by pressure groups for similar treatment. This viewpoint is understandable from a practical political approach but may be questioned in light of the fact that the provisions requested relate not to political treatment, but to the nonpolitical question of national defense.

The House committee report makes a definite finding of policy that the Selective Service System should not have conclusive jurisdiction in the matter of determining deferment for scientific and other specialist categories but that the control in this matter should reside in the National Security Resources Board. The recommendations of that organization, if approved by the president, should be transmitted to the Selective Service System in the form of an executive order, according to the House committee report.

Senate Committee In Agreement

This same general philosophy is embodied in the Senate committee's report. The committee makes the additional point that writing the deferment provision into the law would be "unworkable" and would result in a law "so ponderous and inflexible as to be . . . wholly unresponsive to the constantly changing requirements." But the Senate committee is equally insistent that the Selective Service System is not the proper agency to pass on this question. It, too, suggests the National Security Resources Board as the appropriate agency to weigh the various manpower requirements "in the light of all the activities necessary to support an effective fighting force."

The Senate bill gives the president authority to institute deferments for "activity in study, research, and other endeavor" and the committee feels that this provision will provide the necessary authority and machinery "to insure that proper safeguards are placed to prevent a blocking of the flow of trained personnel into the industrial, scientific, technological, and agricultural fields."

Thus there appears to be no doubt of the intentions of Congress, assuming that the committee bills are adopted. But the important question is, are the good intentions of Congress sufficient? The Senate committee points out that except for one addition in wording the proposed act parallels the 1940 Act with respect to essential deferments.

This itself raises the analogy of the possibility of a repetition of the unhappy experiences of World War II in this respect. It may well be asked, if the authority under the 1940 Act was not properly utilized should Congress assume that it will be utilized this time? It is not a question of integrity of the president and his administrators, but a realization that in time of crisis such matters may "go by the board" in the heat of the moment unless there is a specific Congressional prohibition or mandate.

With both committees committed on this point, however, the probabilities are that the profession will have to accept the policy statements alone and exert such influence as is possible to carry it into effect.

Portsmouth Claims Oldest Active Member

Portsmouth, Ohio, Chapter thinks it has on its membership roster the oldest active NSPE member.

It has thrown out a challenge to other chapters to produce an older member.

The Portsmouth oldster is George W. Wilhelm, who will round out 90 years come July 21. He still attends meetings of the chapter, recently was honored by his fellow members at a special meeting. A small man with a deep and surprisingly powerful voice, his hearing is good and his eyesight fair. His only complaint, in fact, is that he has outlived his friends and associates and now must spend a good deal of his time alone.

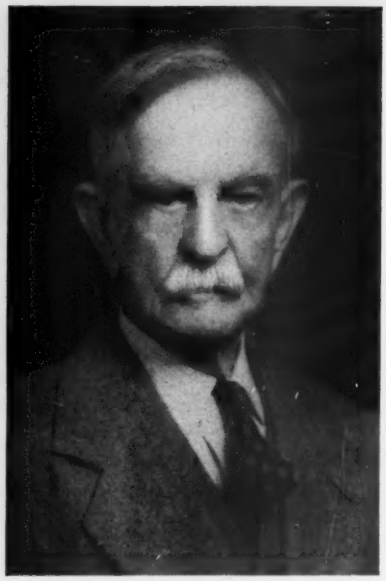
Prior to 1913, he was engaged as an engineer in the location and construction of the first section of Portsmouth's 62-foot stage floodwall. He later served as city engineer, then as county engineer of Scioto County. He went West when he left the county job, heeding the call for engineers to direct extension of the long ribbons of rail that were to knit the nation together. He served such railroads as the Union Pacific, Santa Fe and Pullman Company in the west, and also chalked up service with the Nickle Plate, Wisconsin Central, Scioto Valley and Illinois Central lines.

Active At 79

By 1936, he was back in the town of his birth taking an active part in reconstruction of the city's flood defenses—at the age of 79 scampering around projects with the zip and vitality of the more active of his younger fellow engineers. Some of his project notes later were used in establishing data for design of a sewage reservoir (others tried to decipher the notes, then gave up while a police car was dispatched by radio to get Wilhelm's "translation"). When the excavation was complete, the field notes that he had made at the age of 79 were accurate to within one-eighth of an inch.

"It has been the privilege of George Wilhelm to witness the growth of the United States, to take a part, along with his many contemporaries, in the building of better things for tomorrow, always moving forward, always confident that tomorrow would come," Harlan Danner commented at the chapter meeting.

"Today, as in all those 32,794 yesterdays, he is still looking forward, giving to us, the engineers of today, an example by which we may guide ourselves tomorrow."



Oldest NSPE Member?

Washington Official Hands Down Term Ruling

Washington's attorney general has ruled that a corporation or company can't use "engineer," "engineering," "surveyor" or "surveying" in its name, nor is it eligible to practice or offer to practice engineering or land surveying in the state.

Basis of the ruling is the Engineers' Registration Act passed by the last legislature. Smith Troy, the attorney general, has ruled that "professional engineering is of such a personal nature that it cannot be practiced by a corporation or company." He points to the provision in the act which provides that certain qualifications acquired by a person cannot be possessed by a corporation or company.

Texas Sets '49 Meet Date

Invitation of the Central Texas Chapter to Texas Society asking that the 13th annual meeting be held at Waco has been accepted.

Tentative dates set for the meeting by executive board meeting are Thursday and Friday, January 20 and 21. The dates must be approved by the Central Texas unit before they are definitely set.

Article Asks Student Consideration of NSPE

Old-timers in promotion of professional consciousness and registration of engineers had better look to their laurels.

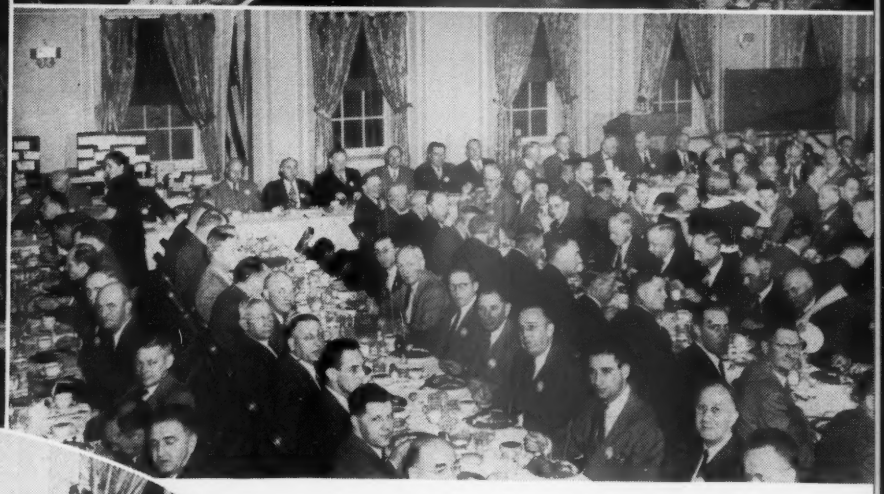
At least if the spirit shown in the latest issue of the Drexel Technical Journal is indicative of the feelings of today's engineering students. The magazine is published by students at the Drexel Institute of Technology, Philadelphia, and the lead article in the issue is devoted to "Professional Engineering." Written by John J. Bacica, mechanical-engineering student of the class of 1950, the article lumps together a need for development of a professional consciousness, the need for registration and a strong argument for membership in NSPE, its member state societies and local chapters.

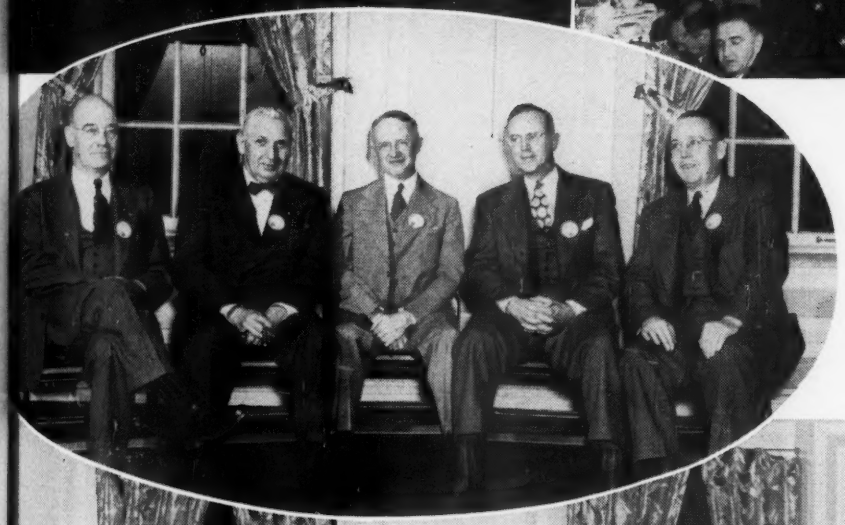
"As students of engineering, it is our duty to look to the future," the article begins. "We should think not only of the path we will pursue by which we will make a contribution to society but also of our position in that society. While we are in college we are in the formative stage of becoming the future engineers of our country. It is here that we should develop professional consciousness.

"Medicine and law are generally accepted professions; engineering should also be on the same plane."

In answering queries as to why students should become registered professional engineers at the earliest possible moment, the article declares that "aside from the idealistic motives, which are sufficient in themselves, there are practical reasons for such a step." Primarily, it points out, the social and economic welfare of the engineer must be considered. If anything is to be accomplished, a sound organization of all engineers is necessary—and the article submits that NSPE is the organization that fits the bill.

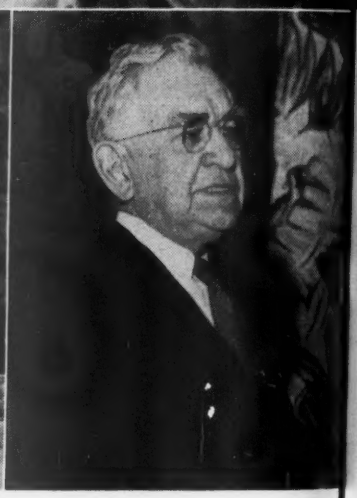
"Registration of all men engaged in engineering work is a large step toward raising the standards of the profession and eliminating those who have no engineering qualifications," the article concludes. "In this way, those who engage the skills of an engineer can do so with confidence and be sure that he is qualified to 'safeguard life, health or property'."





Philadelphia Chapter's last meeting until Fall gave the cameraman a chance to get these pictures. Upper left, State President Ray Fuller (center) inducts H. R. Halloran, chapter president-elect (right) while Retiring President Gerhard Lauter looks on; right, two banquet shots showing part of the 270 who attended the Fourteenth Annual meeting at Engineers Club in Philadelphia; center left, Pennsylvania Society officers in attendance included T. A. Monk Jr., national director; R. V. Hudson, financial secretary; Fuller; C. T. Shock, vice president; A. H. Kidder, state director; lower left, the chapter officers (seated) Kidder; Treasurer George Cook Jr.; Vice President H. F. Bamberger; Lauter; Halloran; Secretary H. E. Corl; Past President Charles Haydock; and standing, Directors E. L. Shoemaker, Nelson Kriebel, R. V. Hudson, T. F. Kermey, C. B. Broschart, J. P. Evans and William A. Toperzer. Total membership in the chapter now has reached 700.

Philadelphia Finishes Season With Gala Meet



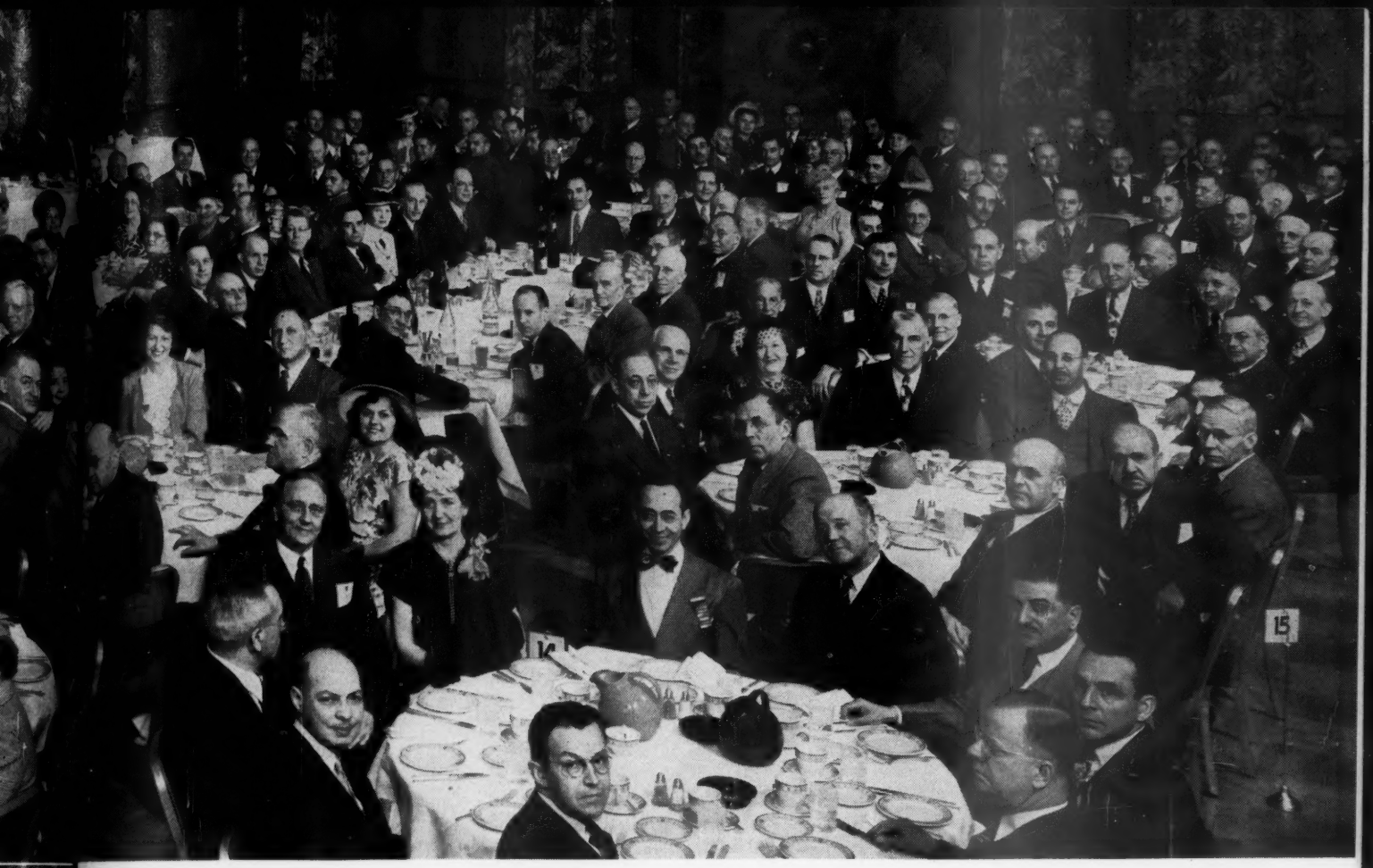
New York State Society's annual convention in New York City found the photographer focusing on (top) a general banquet scene that includes the head table and just about everyone in attendance; and (below) on three speakers at the banquet. Left is Alex Van Praag Jr., NSPE president. Center is James F. Fairman, toastmaster and NSPE Inter-Society Relations Committee chairman, at the mike, while gathered around him (left to right) are Van Praag; Dr. John C. Riedel; NSPE Executive Director Robbins (standing); James Logan, president of New Jersey Society; Dr. D. B. Steinman; J. L. Harkness, Connecticut Society; and George J. Nicastro, vice president of NYSSPE. At right, Dr. Riedel—former president of both NSPE and NYSSPE—addresses the banquet.

As New York Held Annual Convention

Annual convention of the New York State Society at Hotel New Yorker was another banner event in the busy calendar of activities of the NSPE member.

The meeting heard NSPE President Alex Van Praag Jr. declare that the strength and effectiveness of NSPE lies in strong state societies and local chapters and declare himself as opposed to a "top-heavy national society." Proper role of NSPE, he said, is as a coordinator of the work of state societies. And he stated flatly that the only way the profession can obtain the benefits it seeks, deserves and needs is through NSPE where the professional level is the basis for all action.

Delegates heard that NYSSPE has grown to a total membership of 2,541; witnessed presentation of the president's gavel to Schenectady Chapter for the greatest increase in membership and honoring of Monroe and Erie Chapters for a photofinish with Schenectady; turned down a proposal of Retiring President William H. Lar-



kin and George Barrows, executive secretary, that the state hire a lawyer to handle enforcement, legislative and labor cases (the chapters were told they'd have to foot the bill for any legal counsel they retained); and voted to limit membership of engineers-in-training to the chapter level.

Larkin also was able to report that considerable progress had been made in getting the state of New York to view certification as a professional engineer as a "must" for important state engineering jobs.

In the election of officers, William W. Perry, chief engineer of the New York State Electric and Gas Corporation, was elevated from the vice-presidency to the president's post to succeed Larkin. Robert A. Sovik, Syracuse, was named to the vice-presidential post; and three new directors—Carl L. Zamjohn, Arthur L. LaRoche and Edward J. Nunan—were named.

Chapter Studies Mining

Use of magnets as separators in coal mining operations and incentive plans used to increase coal production drew the attention of members of Mingo (W. Va.) Chapter. Speakers were Frank E. Park, a representative of the Eriez Magnetic Separator Co., and David Bayer, production engineer for Pond Creek Pocahontas Coal Co.

Chapter Gets Lowdown On Excavations (Dental)

How flourine in water supplies will reduce dental cavities, particularly among children, was described to members of the Fox River Valley (Wis.) Chapter in a meeting at Fond du Lac. Speakers were Dr. A. W. Bull, of the dental division of the Wisconsin board of health, and Jerome C. Zufelt a member of the chapter who is superintendent of the Sheboygan Water Department.

Dr. Bull presented the economic and public health features of the presence of flourine in water, while Zufelt discussed the problem of introducing flourine into water through use of sodium flouride.

Walter G. Bryan, Neenah, has replaced E. J. Beatty, Menasha, as secretary-treasurer of the chapter.

OSPE Brochure Out

"This Engineer Believes in a Strong Profession."

That's the blunt statement of the striking cover of the new membership brochure being distributed by Ohio Society to spur enlistment of members. Printed in green and black, the brochure has a cover which features a coat lapel carrying the familiar NSPE shield. The membership aid outlines briefly the rise of NSPE, details organization of OSPE and its activities, and outlines qualifications for membership.

Canton Not Gun-Shy

Evolution of the military rifle drew the center of the stage at a recent meeting of Canton (Ohio) Regional Society at a meeting in Canton. Speaker for the event was Terry Brown, manager of the East Ohio Gas Company, who also had present his own collection of rifles that dates back to some of the first such weapons to be used.

Father-Son Banquet Works

Decatur (Ill.) Chapter has discovered that father and son banquets are an excellent means of social entertainment and interesting the younger generation in the profession. The chapter held such a banquet recently, with members invited to bring their sons or youths of high school age who were interested in engineering as a profession.

Around The Nation With Our Members

WASHINGTON OFFICE NEWS

By Paul H. Robbins

After a number of delays caused by the current situation in printing, the new membership brochure has been received in the Washington office in quantity for distribution to state societies.

The new publication is a departure from the type of membership information previously available regarding NSPE. While the pertinent information regarding objectives, and organization of the Society is included for those who are not familiar with these facts, additional information regarding the work of various committees and activities is verbally and graphically portrayed. Commercial artists were utilized to illustrate the work of the Society and the layout of the material utilizes color as well as attractive page arrangement.

Text material was kept to a minimum in order that the reader could obtain a complete picture of the Society in a concise manner. From the introductory letter of the President to the listing of the offices of the state societies, the brochure contains valuable information for use in interesting professional engineers in affiliation with the professional organization.

The demand for the pamphlet has exceeded the initial print order. However, each state has been supplied with a quantity for immediate use and it is expected additional copies will be made available from an additional printing before the end of the year. Most of the states have made plans for use of the publication in connection with membership programs. It is hoped that each member who receives a copy will see to it that it is placed in the hands of a non-member professional engineer with a personal invitation for him to become affiliated with NSPE and its member state societies.

State Secretaries Conference

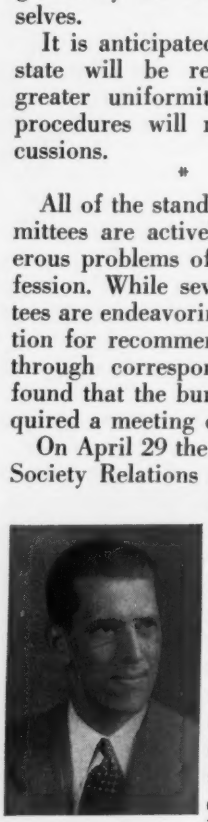
The Annual State Secretaries conference has been scheduled to be held at the Deshler-Wallick Hotel in Columbus, Ohio, June 24th and 25th. Profiting by experiences from previous state secretaries conferences, the sessions this year will be held independent of other NSPE meetings. In order that ample time may be given to the discussion of the many administrative problems in which coordination of activity is desirable, the full two days will be devoted to discussions suggested by the state secretaries themselves.

It is anticipated that every member state will be represented and that greater uniformity in administrative procedures will result from the discussions.

* * *

All of the standing and special committees are actively considering numerous problems of interest to the profession. While several of the committees are endeavoring to lay the foundation for recommendations and studies through correspondence, others have found that the burden of work has required a meeting of the committee.

On April 29 the committee on Inter-Society Relations met in Washington, at which time the basis for operation of the committee was developed. Elsewhere in the magazine appears a picture of this committee and from its considerations will emerge recommendations for closer cooperation of NSPE with other organizations of the profession for common objectives.



Paul H. Robbins

On June 11, the Constitution and By-Laws committee will meet in Washington to consider a number of items concerning the administration of the Society now governed by our official rules. Suggestions for changes have been presented by various states and the board of directors and include review of the committee structure of the Society, provision for certain additional committees, clarification of current wordings, provision for creation and administration of a reserve fund, inclusion of rules for use of insignia, and other items.

An important meeting of the committee of the Problems of Young Engineers will be held in New York on June 26. Chairman William Ryan has submitted an extensive agenda to the committee for consideration at this meeting. This committee, however, is the clearing house for any problem of younger engineers in which they feel NSPE should take an active part. Chairman Ryan would be pleased to have the suggestion of any member as to particular problems which he wishes the committee or the Society to consider.

The executive committee will meet in Washington on June 12 to consider many items of administration and policy which need attention during the interim before the next board meeting.

Chairman Chappell of the Public Relations committee plans to follow-up on a number of contacts already developed for an aggressive public relations program for the Society. These follow-ups will be made during a trip Chappell is planning early in June which will take him to Chicago, New York and Washington.

* * *

At Canadian Meeting

NSPE was represented at the annual meeting of the Dominion Council of Professional Engineers in Niagara Falls, Ontario, May 24 to 26 by the executive director. Those who attended the NSPE annual meeting in Buffalo will recall the cordial relations existing between our two organizations through the presence of Dr. Ackroyd and Col. Watson, president and secretary of the Canadian group.

* * *

Preceding the charter presentation to the South Carolina Society on April 24, the executive director addressed the Florida Engineering Society at their annual meeting in Orlando. The Society of Professional Engineers of Florida appears to be well started and it is confidently expected that a strong aggressive society will be active in the professional interest of engineers in that state in the near future.

* * *

President Van Praag spent an active week during the latter part of April visiting the state societies in the New England Area. Addressing the Massachusetts Society on April 29, he then visited the Rhode Island and Connecticut Societies before attending the New York State Society annual meeting the end of the week. In addition, he addressed the students at the University of Wisconsin on April 15.

ISPE Considers State Engineer of Year Award

Indiana Society of Professional Engineers has taken steps to set up an annual award to be given to "The Engineer of the Year in Indiana" during the annual meeting of ISPE.

Job of picking the man to be honored goes to a special committee to be appointed during January of each year by the Society president. Membership on the committee includes one representative of each of the founder societies, one representative of each state chapter and the president as ex-officio member. Half of the committee members would be replaced each year, and the chairman would be designated by the ISPE chieftan.

Nominations for the award could be made by all members of ISPE, and would be due in the hands of the committee prior to Oct. 1 of each year. In weighing the qualifications of the candidates, their accomplishments in particular fields of work would be given a weight of 40%; reputation in the community, 10%; standing among associates in the engineering profession, 10%; general character, 10%; activity in national, state and local affairs, 5% each; activity in engineering societies, 5%; membership in engineering societies, 5%; and membership in ISPE, 5%.

The proposed certificate of award to the top-ranking engineer in the state would cite the recipients "outstanding engineering achievements which have substantially improved the safeguarding of life and of health and of property and which have definitely broadened the recognition of the principles which control the forces of nature and which have substantially expanded the utilization of the materials of nature and which have definitely raised the plane of the utilization of human activities."

Society Magazine Tells Of College and Alumni

April issue of The West Virginia Engineer, official publication of the West Virginia Society, is devoted to bridging the gap between the College of Engineering of West Virginia University and its alumni.

In addition to carrying the latest word of the college to graduates, the issue reports to the alums what their classmates and those who preceded and followed them are doing.

Illinois Seeks Basis For Engineer Discharge

An editorial demand that the St. Clair County board of supervisors give its reasons for the ouster of one member of the Illinois Society and appointment of another is contained in the latest issue of Illinois Engineer, official magazine of the NSPE member.

B. C. McCurdy, past president of ISPE who had been county superintendent of highways in St. Clair county for the past 18 years, was turned out of office at a meeting of the board of supervisors which had been expected to bring his renomination for a fourth six-year term. The board named Ralph Bartelsmeyer, Nashville, Ill., also a member of ISPE, to the post.

The editorial attacks the incident for the "element of insecurity engendered through a lack of publicly announced reasons" for McCurdy's dismissal; reports that the Society's attempts to learn the basis for the dismissal were met with a deaf ear; and declares that "if the cause is based on internal strivings within a local political group, there is cause for serious concern on the part of the profession and the public."

"The lack of a clear statement of justifiable reasons causes a resulting feeling of lack of security on the part of personnel in the organization and a feeling of uneasiness throughout similar units in the state," the editorial declares. "Results of such a condition can only be reflected on the part of such personnel through the seeking of more settled conditions with private industry or under more favorable civil service protections."

The editorial concludes with a demand that "an honest statement of reasons" be given by the county board to convince the public and the profession "of the integrity of the board's actions and intentions."

Boston Hears Van Praag At Annual Meeting

Annual meeting of Metropolitan Chapter, Boston, Mass., heard Alex Van Praag Jr., NSPE president, and named new officials to serve for the ensuing year.

Representatives from all of the chapters in the Bay State, with the exception of Western Massachusetts, heard the NSPE executive deliver a forceful and inspiring address which combined humorous and serious aspects of the profession.

William H. Hopkins, retiring chairman, was able to point to a 29 per cent gain in membership in outlining the chapter's progress in the past year. He won warm congratulations for his work in organizing the chapter and getting it started on the road to success.

Named to lead the chapter were Dugald C. Jackson Jr., chairman; Arthur W. Pratt, vice chairman; and Percy H. Loomer, secretary-treasurer. Gilbert Small was named to the executive board for a three-year term. Entertainment for the meeting was furnished by Norman J. Howe, vice president of the Boston Society of Magicians and a member of the chapter.

Telephone Expansion Plans in State Told

Bell Telephone Company of Pennsylvania is now expanding its system at the rate of $540 a minute every working day to meet the state's continuing and unprecedented demand for telephone service, W. D. Gillen, vice president in charge of operations, said in speaking before the Harrisburg Chapter.

The engineer plays a very vital part in this tremendous expansion of the telephone system, he pointed out, as every addition must be planned and executed under the direction of engineers.

"As of December 31, 1947, we had in service in Pennsylvania nearly 2,200,000 telephones. This year we expect to add another 200,000 to reach an all-time high of nearly 2,400,000 telephones. In 1946, we spent some 42 millions of dollars for new construction. In 1947, as we exhausted every available reserve, we increased that amount to more than 60 millions of dollars. This year, we're setting a new all-time high of 66 millions of dollars."

The Bell Company now has more than 30,000 employees in Pennsylvania —operators, repairmen, installers, business office people, accounting department workers; and others, he said, among whom the foremost is the telephone engineer.

To carry on their work, the Bell Company this year will add 21 new central office buildings, additions to 10 others, 200,000 telephone instruments, 600,000 miles of wire, 108,000 new dial "lines", about 400 new switchboard positions, and literally hundreds of thousands of other less known items.

Kansas Launches New Society Publication

"Volume 1, Number 1, May 1."

That's the polite introduction the newest of the publications of NSPE's member state societies, The Kansas Professional Engineer, takes for itself.

The new publication is drawing admiring glances from Society leaders—Murray Wilson, president; C. H. Scholar, vice president; E. E. Larson, secretary; and Rufus Kirk, treasurer—and from the entire membership of KSPE. Plans call for issuance of the publication "at least once every two months."

The Kansas Professional Engineer is expected to play a large part in the continuing efforts of KSPE to effect a merger with Kansas Engineering Society. First issue went not only to all members of KES and KSPE, but also to all registered engineers in Kansas.

West Virginia Boosts Membership Percentage

Membership of eligible registered engineers in West Virginia Society of Professional Engineers has increased 24 per cent on a state-wide basis over the past year.

The average percentage for the state of registered engineers who are paid members of WVSPE thus has risen to nearly 50%. Williamson Chapter points to 116% membership among the registered engineers in its area, with a large membership among registered engineers in neighboring states; Beckley has 65%; Parkersburg 63%; Wheeling and Morgantown 56% each; Bluefield 52%; Charleston 47%; Fairmont 37%; Clarksburg and Huntington 36%; and Elkins 33%.

The Society has recently urged all registered engineers in the state who are non-members, through the medium of individual letters, to join the state unit in furtherance of the professional aims.

Cincinnati Gets Slate

Nominating committee of Cincinnati (Ohio) Chapter has proposed as officers for 1948-1949 Leonard A. Bauer, president; R. E. Colado, 1st vice president; Jay Bouwman, L. W. Graf and F. A. Wissell, 2nd vice president; Alfred LeFeber, secretary; and H. J. Long, treasurer.

Zanesville Plans Late Summer Stag

Zanesville Regional (Ohio) Society is laying plans for an August stag at which local legislators from Muskingum, Coshocton and Guernsey counties and city officials will be honored guests.

The late Summer event is one of a series of activities being planned by the chapter's leaders—R. W. McAllister, president; E. F. Shaffer, vice president; H. T. Burnham, secretary—to keep the unit in action over the summer months.

Legal Enforcement Plan Studied by Two MAPE Units

Two chapters affiliated with Minnesota Association of Professional Engineers are studying closely success of other states in suits to halt illegal practice of engineering.

District 8, meeting in Virginia, heard George Beardshear, chairman of the legislative committee, report on the success of many court cases in other states in preventing misuse of the term "engineer." And the District 9 meeting, at Thief River Falls, named a special registration law and enforcement committee consisting of A. M. Graves, G. W. Turnell, L. N. Nelson and H. R. Chapin.

The District 9 meeting also brought a recommendation from members that the name of the monthly publication be changed from "The Bulletin" to "The Minnesota Engineer."

Next Bronx Chapter Officers Are Nominated

Nominating committee of Bronx County (N. Y.) Chapter has named nine chapter members as suggested officers of the NYSSPE-NSPE member. Elections were to be held at the June meeting.

The committee's slate includes Edward T. Crinnion for president; Edward B. Fitzpatrick for 1st vice president; John T. Hogan, 2nd vice president; Sylvester W. A. Murphy, secretary; Harrison Blankstein, treasurer; Daniel D. O'Connell, Charles F. Girard, Otto Mald and John A. Young, directors for three year terms.

At the May meeting of the chapter, Professor Alexander Haring, a member of the chapter, outlined methods for "Multiplying Your Versatility."

Georgia Holds Area Housing Symposium

First Southeastern Housing Symposium at the Georgia School of Technology, Atlanta, has met with such success that a permanent committee has been named to perpetuate the conclave as an annual event.

Georgia Society was one of the sponsors of the symposium, and has named three members—Straiton Hard, Boynton Cole and F. R. Chadwick, Jr.—to serve on the permanent committee.

"Don't Copy Our Lead," Britisher Tells Unit

"Don't let it happen here."

That was the plea made to members of the Appalachian (W. Va.) Chapter by Shepherd Smith, a representative of Hayden Nilos, Ltd., Sheffield, England, in his report on nationalization of Great Britain's industries. He spoke from the viewpoint of operators and owners.

Since England has to import two-thirds of its foodstuffs and has only coal and iron as natural resources, he declared, the problems of the nation should be solved through international means rather than through nationalization. Nationalization has pampered the laboring class, he said, and through regimentation and high taxes all incentive for the owner to advance has been retarded.

The chapter's vocational guidance committee has launched plans for a program to acquaint students of surrounding high schools with features of the engineering profession.

Convention Plans Started

Planning for the 1948 annual convention of NSPE, to be held at Hotel Sherman in Chicago December 16 and 17, already has been started by Illinois Society.

The ISPE is active on other fronts too. It is preparing to make a survey of employment conditions of all members to obtain a concrete basis for mapping a salary program. And another new chapter, DuKane, has been added to the State Society roster. The new unit covers DuPage and Kane counties west of Chicago, and its organization comes on the heels of organization of another chapter to serve the Aurora-Elgin area.

Mahoning Makes News On Three Varied Fronts

First gentle zephyrs of warm air have launched members of Mahoning Valley (Ohio) Chapter on planning of a family picnic, with the board of directors doing a heavy share of the ball-carrying honors to date.

At its May Meeting, held in Youngstown, Dr. E. L. Luaces helped the chapter map plans for handling violations of the engineers registration law in the area served by the NSPE-OSPE member. His assistance came after completion of an address on professional practice and ethics, in which he outlined the work of OSPE in prosecuting law violators. Luaces has taken a leading part in those prosecutions.

Mahoning Valley, incidentally, has started a survey of an eleven-county area to determine how many engineers reside therein. The information isn't being gathered, however, primarily for membership use. It will be presented to newspapers in the area to prove that there are several times as many engineers as all other professionals combined in the hope that the newspapers will come to realize that information about engineers has a valid news value.

New Officer Slate Heads W. Va. Chapter

A new slate of officers has taken over leadership of Eastern (W. Va.) Chapter, following a mail ballot.

Topping the slate as president is Rufus C. Kuhl, and serving with him will be C. O. Gerwig, vice president; G. Allen Smith, secretary-treasurer; and Ray F. Small and Roscoe Gregory, directors. President Kuhl has announced as committee chairmen C. C. Holbert, legislative; H. C. Bever, ethics and professional practices; and Charles E. Albert, education.

Missouri Chapter Session Has Doubleheader Program

A double-header program which featured a discussion of professional ethics and a film on the manufacture of steel highlighted a meeting of the Western (Mo.) Chapter.

Leading the ethics discussion was B. J. George, a member of the chapter. Under his direction, members were familiarized with the Canons of Ethics and heard how they apply to the practice of engineering.

Zurmuhlen Tells Erie Of Big New York Job

Erie County (N. Y.) Chapter wound up its season May 17 at a meeting in Buffalo which heard the public works commissioner of the Nation's largest city and saw installation of new officers.

Speaker for the occasion was Frederick H. Zurmuhlen, New York, who proved to chapter members that the engineering problems of a huge city can be almost as large. He also found time to state his own views on a subject which he described as "closest to every engineer's heart, and mine—professional consciousness."

Zurmuhlen's appearance at the chapter meeting, incidentally, was something of a homecoming. It was just 18 years ago that he had gone to Buffalo as chairman of the New York State Society's membership committee to serve as chairman of the organization meeting of Erie County Chapter. His return found the chapter the third largest in the state.

Next regular meeting of the chapter has been set for September 18.

Dallas Chapter Aids In Guidance Program

Dallas high school seniors interested in taking engineering courses in college received first-hand information about the profession from members of Dallas (Tex.) Chapter in May.

The chapter participated in an institute with the Community Guidance Service at which more than 200 youths interested in some phase of engineering were assisted in thinking through the needs of the field and its educational requirements. More than 15 members of the chapter devoted their time at the session to counseling the would-be engineering students.

Fee Schedule Session Marks Hartford Meeting

Discussion of a fee schedule for professional engineering services sparked a lively discussion at a recent meeting of Hartford County (Conn.) Chapter held at the City Club of Hartford.

The schedule was drawn up by a local committee for members of the chapter who are engaged in private practice. It serves as a guide for such members in charging for services they render.

Chandler Wins ASCE Promotion

Washington engineering circles have lost a valued friend, but the higher job to which he has gone has made his departure from the Nation's capitol less regretted.

Board of direction of American Society of Civil Engineers has named E. L. Chandler assistant secretary, a job which will take him to New York and away from the Washington scene where he has been eastern representative for the past four years.

N.Y. County Slates June Annual Dinner

Attention of all members of the New York County (N.Y.) Chapter is focused on the annual dinner of the unit scheduled for early June.

In preparation for that meeting, the chapter nominating committee has proposed as officers for the coming year Anatole R. Gruehr, president; Frank M. Billheimer and Harold H. Funk, vice presidents; Ellis L. Lavine, secretary; Edward D. McOwan, treasurer; Charles A. Martin, financial secretary; and as candidates for director James P. Costigan, William F. Kennedy, Robert D. Martin, Leroy A. Nettleton, Charles V. Obst, Herbert F. Roemmele, H. Gregory Shea, Earl B. Smith, J. E. B. Stuart and Felix Viola.

Central Ohio Awards Ladies Night Top Spot

"Our most important meeting of 1948."

That's the description given the "Ladies' Night" program of the Central Ohio Chapter, held at the Granville Inn, Newark. The dinner event heard Harry L. Rahman, Celina, Ohio, an outstanding humorist-philosopher, talk on "Crazy People."

Spokane Names Officials

Howard Stingle has been elected president of Spokane (Wash.) Chapter, and with him will serve R. E. Tobin, vice president, and William Connolly, secretary.

Professions Compared

A geometrical comparison of the engineering profession to the legal profession, by Robert A. Stuart, state membership chairman of the Junior Bar Association of the American Bar Association, featured a meeting of the Capital Chapter (Ill.).

Gopher President Kept Jumping for Meetings

Knife and fork circuit visits that pop up as a part of any state president's administration have kept the president of the Minnesota Association of Professional Engineers on the jump.

During April, T. S. Thompson visited a meeting of District No. 2 at Mankato; District No. 3 in Aitkin; District 4 in St. Paul; District 5 in Minneapolis; and District 6 at Fergus Falls. One of the top items of discussion that has appeared at the meetings, Thompson reports, has been the work of the MAPE registration law enforcement and ethics committee, headed by L. N. Thompson.

The committee is working on the basis that the state registration law is for the protection of the public welfare and economy, and that attempted enforcement on any other basis will lead only to dismissal in court and to loss of public esteem and respect.

"Our program should, in so far as possible, be one of education," President Thompson advises. "It should be preventive rather than punitive. If necessary, we should not hesitate to take legal action. However, this should be taken only as a last resort and if taken we must be sure that we have the evidence and the witnesses necessary to win. Our interest is in seeing that the law is complied with, not in seeking to punish some alleged violator.

"We have members in practically every county in the state. This provides a wonderful opportunity to carry on an educational program at the local level where it is most effective. The greatest educational force in the world is that of example. As MAPE members, we should at all times and on all occasions furnish the leadership of a good example."

TSPE Seeks More Funds For Two Federal Agencies

Texas Society has launched a drive to gain additional funds for the U. S. Geological Survey and the U. S. Coast and Geodetic Survey.

The TSPE took up the matter after learning that past appropriations for the two units have been inadequate for proper functioning and reasonable distribution of the results of the agencies' work. TSPE has circularized all members of the Texas Congressional delegation asking that they take an active part in obtaining the desired monies.

Dayton Meeting Features Certificate Presentation

Dayton (Ohio) Chapter is making sure that new registered engineers hear about the chapter, the Ohio Society and NSPE.

May meeting saw Robert Wade, a member of the State Board of Registration, present certificates to the new registrants in the Dayton Chapter area. By tying in the presentation ceremony with a chapter meeting, the chapter gained a lot of goodwill from the new registrants and forcefully called itself to the attention of the latest crop of professionals.

Late April meeting of the chapter was a joint session with Dayton Technical Societies to hear Major Gen. D. L. Weart, divisional engineer, Ohio River Division, talk on the importance of the Panama Canal to commerce, national defense and future development. Gen. Weart formerly was chief of staff, Carribean defense command, which headquartered in the Canal Zone.

St. Louis Aims High For Activity Title

Tops in the state in '48.

That's the aim of St. Louis (Mo.) Chapter, which has completed its organizational work for the current year and is charting its course of activities. J. W. Hubler heads the list of officers for the year, with other chapter officers including N. J. Campbell, vice president; E. E. Carlson, secretary-treasurer; Walter Siegerist, E. S. Rehagen, J. C. Parmley, J. A. Harvie, D. C. Bowman and Clarence Ax, directors; and as committee chairmen, Charles M. O'Brien, ethics and practice; M. B. Logie, professional activities and meetings; E. E. Bloss, civic and public relations; A. H. Lamack, membership; and J. E. Vollmar, Jr., social activities.

Michigan Chapter Installs

Washtenaw County (Mich.) Chapter is being manned by the following officers, elected late in April: H. N. Barnard, chairman; Glenn L. Alt, vice chairman; William E. Quinsey, secretary-treasurer; F. A. Heller, state director; and N. B. Stout, alternate state director. Membership in the chapter is made up of engineers in private practice in the county and on the staff of the University of Michigan. Much of the chapter's activity is along educational lines since the county seat of the county, Ann Arbor, is also home of the university.

Chapter Studies U. N.

Misconceptions about the United Nation's were cleared up for members of the San Jacinto (Tex.) Chapter at a recent meeting by Dr. L. G. Halden of the University of Houston's department of government.

Rolla Officers Listed

Manning top offices in the Rolla (Mo.) Chapter are Max J. Gleisner, president; Dr. J. D. Forrester, vice president; Larry Lambelet, secretary-treasurer; and Curtis L. Wilson, Edward L. Clark, F. H. Conrad and I. H. Lovett, directors. Joe B. Butler is state director.

Nevada Society Growing

Nevada Society is scheduled to be strengthened soon when an eastern Nevada group of professional engineers carries out its plans for joining the NSPE member. That the group planned to join NSSPE was announced when it elected George B. Maxey, Kimberly, chairman; J. F. Sharp, Kimberly, vice chairman and treasurer; and R. W. Millard, Ely, secretary.

Chapters Use Card System

Five Ohio Chapters keep up to date on membership possibilities by using a card file system which covers the name, address and line of work of each non-member registered engineer in their areas. Cleveland, Dayton, Toledo, Marion and Franklin County Chapters are using the system, and report excellent success.

Making No Little Plans

Michigan Society hopes to double its present membership before the end of the year. That's the report of Ivan Cuthbert, national director from the state, who says the youthful state unit —having passed the 500-member mark —now is aiming at a 1,000 membership.

Ohio Preparing Manual

Chapter relations committee of the Ohio Society of Professional Engineers has started work on preparation of a new "manual of Chapter Activities," to replace the current edition in circulation. The new manual is expected to be far more complete than the aid now in use.

Conference

(Continued from Page 3)

the assembled educators to abandon the teaching of "miscellaneous and ill-remembered data" and to concentrate in general courses on principles and fundamentals and on giving the student the power to recognize and solve the problems he will face in his social and civic life."

Speaking pointedly to the professions of law, medicine and divinity, the provost asked them to "throw out the layer cake method" and to attempt to shorten and strengthen the period of training needed by bringing the human and social training into the professional program.

Provost Smith concluded by stating, "The responsibility of preparing professional students for effective citizenship and cultivated living is a responsibility that professional education cannot delegate to general education. It can be met only if professional education makes its own objectives the development, not merely of technical proficiency, but of a deeply, broadly and socially-cultivated mind and spirit."

Jones

(Continued from Page 6)

over the state.

"It is true that a small financial sacrifice on your part will be necessary. But remember, you have a professional education that is worth at a minimum some $10,000. Maintenance is usually figured at about 5 per cent. You could spend $500 per year to maintain your professional recognition and stature and the sum would not, from an engineering point of view, be excessive.

"Membership in NSPE, its member state societies and local chapters costs only a small fraction of that sum."

Seattle Latchstring Out

Latch string for a friendly Friday noon luncheon session is always out to visiting members of NSPE who may be in the Seattle area.

Seattle Chapter holds regular informal meetings each week on that day at "The Pit," 1616 Fourth avenue. And its members always are anxious to extend the glad hand of welcome to fellow registered engineers who also are interested in Society affairs.

Story Telling Plan Employed by Chapter

Bexar (Tex.) Chapter has instituted a new story-telling contest, rules of which may be of interest to other chapters.

Each person attending a chapter meeting contributes toward a "kitty" which is awarded later to the winner of a story-telling bee. Every member telling a story that no one has heard before has a chance to win. If it is a story that someone else has heard, on the other hand, it costs the teller an additional 25 cents. If the story isn't funny, the teller contributes another quarter; and if it is neither funny nor clean the teller loses 50 cents to the kitty.

Reports have it that the Bexar meetings have been enlivened plenty by the device.

Erie Reaches Member Addition Goal Early

"We're over the top."

That's the good word Harry Sproul, membership chairman of the Erie County (N. Y.) Chapter, could give members of the NSPE unit at its last meeting in Buffalo. The chapter's new membership quota had been set at a net gain of 64 members, and introduction of five new members at the meeting brought realization of the goal.

Officially, the chapter wasn't invited to participate in discussions which will lead to revision of the Buffalo building code. But presence of James M. DeSerio, a member of the unit, assures the chapter a voice in the code redrafting.

Ozark Chapter Hears Of State's Advantages

Case for vacations in their home state and during the Fall was given members of the Ozark (Mo.) Chapter at a recent meeting.

The program for the meeting, held under sponsorship of the state resources and development committee, included a showing of a technicolor sound picture on the vacation land of Missouri and a talk by Allen Bailey of the committee.

Ohio Chapter Newsletter Distribution Widened

Latest edition of the Maumee Valley Engineer, published by Maumee Valley (Ohio) Chapter, went to all registered professional engineers and surveyors in the eight counties that make up the valley.

Editors Burt F. Wyandt and Fred C. Horn told all non-members who received the special edition that purpose of the extra distribution was two-fold—1. "We want to be sure that each of you knows who we are and what we are trying to accomplish;" and 2. "We want to extend to all of you an invitation to visit us at our meetings." The promise is given visitors that they will not be "high pressured" into joining if they do attend sessions, indicating that the chapter programs will be allowed to speak for themselves.

The editors cite the fact that present chapter membership is made up of representatives of eight branches of engineering, in addition to surveying, as proof of the appeal of membership ("We know each other as members of a single profession than as members of separate branches. Such unity is the basis of a sound professional organization."). Civils, Electricals, Industrials, Mechanicals, Chemicals, Communication, Structural and Mining engineers are included in the chapter's membership.

Milwaukee Members Plot Beating Lie Detector

Members of Milwaukee Chapter are trying to figure out a formula for beating the nearly infallible Kielu Polygraph.

Interest of members in the device, commonly known as the lie detector, has arisen since a late April meeting in which operation of the frequently used machine was demonstrated by James Inman.

Missouri Ups Dues To Open State Office

Missouri Society of Professional Engineers has increased dues from $3 to $10 to provide a 1948 budget of $13,750.

Funds provided by the increase will cover the cost of maintaining a full-time office and the salary of an executive secretary.

South Carolina Milestone

Momentous event in South Carolina was the signing of the amended engineers' registration law by Gov. J. Strom Thurmond. Witnessing the signing were (left to right) (seated) T. Keith Legare of NCSBEE and secretary of the S. C. Board of Engineering Examiners; the governor; R. L. Sumwalt, dean of Engineering, University of S. C.; and (standing) Edgar L. Morris, lawyer and registered engineer; H. E. Glenn and A. E. Johnson, both of the South Carolina Society of Engineers; Lowndes Daniel Jr., executive secretary to the governor; B. P. Barber, vice president, South Carolina Society of Professional Engineers; W. K. Beckham, South Carolina Society of Engineers; and L. A. Emerson, S. C. section, ASCE. The amended law brings up to date the original registration law adopted in 1922. It is one of the most stringent laws, so far as definitions are concerned, in existence.

Texas Adopts Manual Of Law Enforcement

Adoption of a Manual of Registration Enforcement has been announced by the executive board of Texas Society, after drafting of the manual by the TSPE registration enforcement committee headed by Harry E. Graham, Corpus Christi.

Goal of the campaign is to reduce "substantially" on a state-wide basis the total number of violators by use of "education and persuasion." The program encompasses education of TSPE members about the law and types of violations; education of the general public about the law through newspaper advertisements, direct mail circulars and other means; and full-scale participation of the State Board of Registration in enforcement.

Violators will receive, as the first step, a letter from the board outlining the existence of the law and its implications as they apply to him. Follow up visits will be made. High on the priority list of violators who will receive attention are those who are eligible for registration. Where necessary, but only as a last resort, flagrant violators or those who are non-cooperative will be faced with court actions.

Five types of violators will be sought out—1. non-registrants who imply they are registered professional engineers or competent to do the work of registered engineers (top priority will be given to halting such violations); 2. unlicensed personnel who make plans for any type of structures other than single-family dwellings; 3. contractors who build structures for public use with their own or with no plans at all; 4. owners who build structures for public use with their own forces and without proper plans; and 5. suspected violations arising from interprofessional disputes.

Nassau Essay Contest Hailed as Success

Nassau County (N.Y.) Chapter has chalked up a complete success in its student essay contest for the best composition on "What the Word Engineer Means to Me."

That's the report of R. B. Dillenbeck, publicity chairman of the chapter, who says both of the contest's two purposes—showing appreciation for the use of the Sewanhaka Central High School as a chapter headquarters and publicizing the activities of the professional engineer—were realized.

The contest was open to any day student in the high school, where the chapter established headquarters over a year ago. Compositions of from 300 to 1,000 words were invited, and the prizes were awarded on the basis of originality of thought, form of presentation, English composition and neatness. Original screening was done by a representative of the high school faculty, with final screening and determination of winners left to a special chapter contest committee.

At a special ceremony in the high school, Dr. David B. Steinman awarded a first prize of $100; a second prize of $50 and five additional prizes of $10 each. More than 800 persons attended the ceremony, at which Dr. Steinman also gave an illustrated lecture on his book, "The Builders of the Bridge."

Also participating in the ceremony were Henry Waldinger, mayor of Valley Stream and past president of the Nassau County Chapter; Robert O. Babcock, chapter president; and Dr. Harold W. Wright, supervising principal of the school.

Newsman Gives Bexar Slants on Better PR

A newspaperman's views on how professional engineers can improve their public relations was given members of Bexar (Tex.) Chapter at a recent meeting.

Subjects with which engineers usually deal—health, safety etc.—make good newspaper copy under ordinary circumstances, A. W. Grant of the San Antonio Evening News told the chapter. But main drawback to presentation of such news about engineering is that it usually is of a technical nature and thus loses much of its appeal.

Three N. Y. Chapters Honor GE Engineers

Three chapters affiliated with New York State Society joined late in April for a zone meeting which honored the General Electric Engineers Association for its interest in the state unit.

Participating in the meeting, held at the G. E. Athletic Association clubhouse, were the Albany, Rensselaer and Schenectady Chapters. They heard Dr. D. B. Steinman, one of NSPE's founders, discuss engineering organizations and famous bridges in an illustrated lecture.

Illinois Chief Focuses Attention on Membership

Membership problems would be very much in the front of the minds of all members of Illinois Society if the suggestion of Society President E. E. Cooper is accepted.

He suggests that to insure chapter membership committees working full time, a portion of every chapter meeting be devoted to a report of the committees' activities and a suggestion period during which members could offer advice to improve the effectiveness of the committee work.

"The professional strength we are seeking," he observes, "will be obtained only when the ISPE can boast of a membership comparable to the potential number of engineers in Illinois having professional eligibility."

Wisconsin Summer Meet Set For Madison Aug. 7-8

Wisconsin Society has announced plans for holding of its regular Summer meeting.

Dates for the meeting have been set as August 7 and 8. Place will be the Loraine Hotel, Madison, and the program committee promises it is working to prepare a meeting that will be of utmost importance to members.

The WSPE board of directors, incidentally, took the case for professional engineers holding some of the state's top jobs directly to the Wisconsin industrial commission and bureau of personnel. Elevation of O. T. Nelson, a registered engineer, to the post of director of safety and sanitation for the commission had left the office of chief building engineer vacant. WSPE leaders obtained assurances that when the job is filled, a registered engineer will be named to the post.

Van Praag

(Continued from Page 8)

generation. Think not of the possibilities as being exhausted. On the contrary, think of the possibilities as only opened to you.

To me the challenge to you is unlimited whether you be interested in civil, electrical, mechanical, mining, chemical, or in any other branch of engineering. Remember there is no such thing as perfection. Each and every product and commodity and way of life is yet to be explored. Even life and the duration of life themselves are open to exploration. I challenge any one of you to contradict the challenge of the future.

But what is your part, at least now, in preparing for the future world? First, and foremost, I would say that your part is to have prepared or to prepare a firm foundation upon which to build. You should have, for you will need, the fundamentals of an engineering education. You need to know how to analyze, and how to approach a subject or problem. You are not expected to be a warehouse of information already fully developed and only knowing where to go for the answer. You are expected to be able to receive a problem, to analyze it from every angle, and to then seek to think out a solution. Fundamental training in mathematics in that analysis is paramount. With this foundation you have the first essential.

You need to have more than a training in fundamentals. You need to know how to work and to enjoy it. You need to be an individual, honest, sincere, and with a high regard for your fellow men. You need to be a personable fellow, friendly, modest and cooperative. You need to be possessed of initiative, courage and ambition, but never at someone else's expense. You need to learn to give credit where credit is due. You need to possess a willingness to serve and to serve in cooperation with others. These are qualities you can readily develop. They should be part of your education and they should become your lifelong partners.

Your Responsibilities

Your responsibilities in the world to come are many. They cover many phases. You will do well to recognize your responsibilities and to weigh well your actions.

There is your responsibility to yourself and your family. You have a responsibility to your community. You have a responsibility to your nation and to the world at large. You have a responsibility to society. Your's is a great heritage but your great heritage is accompanied by equal resopnsibilities. You have still another responsibility which is of considerable moment. It is your responsibility to the engineering profession.

Engineering is a centuries old and time-honored profession. Its accomplishments need not be related. They are accepted facts. But, "engineers" and "engineering" have become such common terms and words that they have resulted in loss of perspective of the profession of engineering.

In contrast, let me cite the respect for and the recognition of the profession of medicine. Similarly let me cite the respect for and the position of the professions of law or theology. These professions, restricted in a manner to those qualified to practice, but advertised continually to the public as respected professions, have, in addition to their professional accomplishments, maintained positions of trust, confidence, respectability and earning capacity because they are *recognized as professions.*

Engineering, on the other hand, in spite of its equal or even greater accomplishments, has come to be an accepted fact. The professional status has not been preserved. Engineering as a profession has not been accord-

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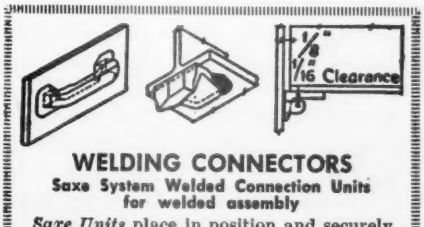

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Inter-Society Relations Unit Meets

Diversity of interest of members of the NSPE Inter-Society Relations Committee is shown by this photograph of the full committee at a late April meeting at Hotel Statler, Washington. From left to right are A. L. Penniman, Maryland Society, a mechanical engineer; E. M. Hastings, member-at-large from Virginia, a civil engineer; J. F. Fairman, New York State Society member and committee chairman, an electrical engineer, John M. Weiss, also a member of NYSSPE, a chemical engineer; and H. E. Nold, NSPE past president, a member of the Ohio Society and a mining engineer.

Van Praag

(Continued from Page 21)

ed equal rank with the professions of medicine, law or theology. As a profession, engineering has not been respected in legal status until only the very recent few years when engineering registration laws, defining qualifications to practice, have been passed. Engineering as a profession has correspondingly lost its prestige and its corresponding earning power.

Schools Fell Short

I believe that the universities and colleges teaching engineering are to be criticized for not having inculcated into their students more of their true responsibilities in professional, social and economic matters. Our engineering courses have tended to develop in students only the technological aspects of engineering. The professional, social and economic welfare of engineers is equally as important to a student, even more important, than the technological aspects, in the opinion of many. Certainly it is fair to say that such inculcation has been neglected in the past.

The engineering university's curricula presently offered in most schools is confined primarily to technological subjects. A few universities do incorporate a number of cultural and social subjects. The problem that presents itself seems to be to find hours enough to include additional cultural and social courses in the engineering course of study. The universities and colleges must find ways of doing this even though it does prolong the number of years required to obtain an engineering degree.

One of your responsibilities in the future is to restore the profession of engineering to professional status. You should conduct yourself in an ethical manner and on a professional plane. You should join in all professional engineering activities within your limitations. This you can do by a few simple and readily available means. You should associate with the professional engineering society, in addition to any societies you join or associations which you may effect with technical engineering societies. You need both. You should work in behalf of both.

You should keep affiliated with the technological society which best serves your education in technological matters. By all means you should continue to affiliate with such societies as the American Institute of Electrical Engineers, the American Society of Civil Engineers, and others. These societies have done a remarkable job in the past in the development of the technology of engineering. Their worth is not to be underestimated to the student as well as to the engineer who has graduated.

However, technological development alone is not sufficient. Professional development is certainly not to be neglected. It has been neglected in the past. This is one of the reasons that we presently have so much attention directed to professional development and one of the reasons why the engineering profession finds itself with lack of professional status, lack of professional recognition, and is one of the poorest paid of the professions.

You and the Unions

Your responsibility to the profession will bring you quickly face-to-face with an important decision and that is the decision as to your responsibility to organizations and organized labor. The growth of labor unions in recent years has been surprisingly fast. The fast growth has been accompanied by attendant ills. Labor leadership has lagged in its responsibilities. Some of the labor leaders have been so aggressive as to seek to dominate all professions and all labor groups and practices. Perhaps you are familiar with such activities of labor unions as that of circularizing student bodies in an effort to develop in students a labor organization consciousness.

I submit that labor unions and professional practices are incompatible. Labor unions in the profession seek to destroy rather than to build. They penalize individual initiative and enterprise. Professional men must be free to act, to think, to dream. This freedom is lost in dominated union groups. I have a wholesome respect for the need of unions and labor organizations, but I cannot submit to the thinking that professional men should be guided, instructed and dominated by labor leaders and practices as we know them today. Either you are a technician or skilled artisan who may properly affiliate with a labor organization for financial gain only, or you are a professional man free and on your own in thinking and in action.

You have a responsibility to learn to live and to let live. You must learn to cooperate with your fellow men and to seek improvements in world affairs by cooperation rather than by individualism and domination. You must be able to see the good points and the bad points in the other fellow and in his work. You must accept your errors and defeats with graciousness and without loss of

pride and humor. You need to develop, as you prosecute your endeavors in the engineering profession, a sense of humor.

If I could encourage you to develop a characteristic that will be helpful to you in your professional career, I would urge you to develop the characteristic or ability to stand and to think, and to talk and talk clearly. This is clearly an important responsibility. Throughout my engineering career I have observed how very rarely can a professional engineer stand up and present has case clearly and concisely as does the doctor or lawyer. All too frequently the engineer, upon being approached and questioned, reaches for his textbook, his logarithm tables or his life-long friend, the slide rule.

Do not misunderstand me, I am not belittling these. Each is an essential component of your equipment. Each, together with your mind, forms the basis for your foundation work. But you need to know when to throw the slide rule aside and to stand and to talk and to reason in terms understandable to those who are not of engineering training. Many an engineer, well qualified professionally, has been relegated to an insubordinate position or to a secondary managerial position only because he lacked the ability to express himself in simple and clear language.

NSPE Recognizes Shortcoming

It is interesting to note that the National Society of Professional Engineers, through its Committee on Education, has recommended that the course of study for an engineering degree be extended to a minimum of five years and that this course of study include a specified number of the cultural, literary and social subjects. That society has recognized the inability of engineers, as a group, to sell themselves to the other professions and to the public at large. I would urge you to equip yourselves with all of the means at your command, and I would include additional study courses in matters of human concern other than technological engineering problems.

El Senor Twichell

They take their customs seriously down Texas way. So Trigg Twichell, affable president of Texas Society of Professional Engineers, donned his south of the border togs to pose for the photographer. Is there another NSPE member state society that can match a picture of its president with that of the TSPE?

The responsibility to develop security is another to consider, but not to overemphasize. How frequently have I heard recently the question, "Have I the security to which I'm entitled?" I do not know what the interrogator means by this. The only real security that one needs in entering upon life is security of opportunity, the rest is dependent upon you and your initiative, your imagination and your skill.

I would suggest that you do not concern yourself too quickly with the matter of security and its co-related salary. All too frequently men have sought employment in my organization, and in all others, when their first question has been, "How much will I earn?" True, earning capacity is important, but it is overemphasized in times like the present times when we are in economic disorder. Long-range thinking will subordinate salary to service. Your employer can only gain by your services being worthwhile. Their worthwhileness increases as you produce and improve your services and their value to your employer. Your energy should be directed to making your services sufficiently valuable so that your employer will recognize your value readily, and he is always looking for such qualities and will give you due advancements as they are earned.

Do not think in terms of repeated changes of employment each time a higher salary is in view. Learn to devote your energies to a well-defined field of endeavor. Particularly is this true in your early career. Do not blind yourself, however, by believing that since you studied electrical engineering, you will not make a success in civil engineering or some other branch. It has been my experience that a very large number of eminently qualified professional engineers find themselves, for one reason or another, serving best in a branch of the profession which is one other than the one in which they specialized in their schooling.

Be Active Civically

I would caution you against nonfulfillment of responsibility resulting from non-participation in civic and social affairs. It has been a failing of engineers to hide themselves away with their instinctive reluctance to advertise

(Continued on Page 24)

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(Continued from Page 23)

themselves and their wares. They have all too frequently put their heads into the sands and believed that the reward for a job well done would be a reward in its own accomplishment. You need to participate in public and social affairs and in community enterprises. You need to develop human characteristics. In doing so you do not need to sacrifice professional standing and professional performance. You do not need to advertise in self-laudatory manner or to force yourself into places where you are not sought, but you do need to take your appropriate place. I have heard it reported by responsible authority that 80 per cent of the bills entered into our Congress have a direct or a more or less indirect effect upon the profession of engineering. Yet, only a handful of our representatives in the Congress are professional engineers.

What will be your reward for professional conduct and professional performance? Your reward will be evidenced in many ways. Not all of them, however, will be directly related to your professional income. You will be rewarded in having a life full and abundant with clean and wholesome living. Your friends, your associates and your professional brothers will hold you in high esteem.

You will be a valuable public servant, honored and respected in your community. Your recognition will be measured by your earnest and sincere contribution to public service. You will be a member of a respected profession, recognized by all, and one which is on a par or above that of the other learned professions.

Your earning power will be commensurate with your professional status and ability. The security of old age, the reward of accomplishment, the gratifications of a job well done, will combine to make yours a useful and worthwhile life, full of rich accomplishment.

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